

B8306 – Capital Markets and Investments

Fall 2015 Syllabus (preliminary)

Basics

Professor: Harry Mamaysky

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Class time (room): Tues and Thurs, 10:45am-12:15pm (Uris 331)

Optional Friday review sessions: 4-5:30pm (Uris 330); 9-10:30am (Uris 326); 2:15-3:45 (Uris 142)

Office hours: by appointment

Teaching assistant: TBD

Updated: 8/4/2015

Details could change

I Description

This course has three goals:

1. To introduce the principles of investing from an applied perspective. Leading applications include personal and professional portfolio management, risk management, and security valuation.
2. To introduce the following concepts:
 - risk-return trade-offs,
 - diversification,
 - systematic and idiosyncratic risk,
 - expected returns,
 - market efficiency,
 - performance evaluation,
 - arbitrage,
 - the term structure of interest rates and bond duration,
 - pricing and hedging options.
3. To provide sufficient background knowledge for students seeking an overview of capital markets and an introduction to advanced finance courses.

Connection to other courses

Capital Markets uses and builds upon the basic valuation tools developed in Corporate Finance, such as arbitrage, time value of money, understanding risk-return trade-offs, the CAPM, and asset valuation. Capital Markets uses many concepts from Statistics, such as random variables, probability distributions, regression and hypothesis testing. Particularly in the portfolio choice section, the course uses optimization methods and modeling tools from Business Analytics.

II Materials

Textbook. Recommended textbooks can be purchased at the Columbia University Bookstore and are on reserve in Watson library:

- *Investments* by Bodie, Kane, and Marcus (hereafter BKM), 9th or 10th edition
- *Investments, Student Solutions Manual* by Bruce Swenson, 9th or 10th edition.

Course notes. Notes will be distributed in each class, and will be available on Canvas.

Additional readings. Relevant articles from industry, academia, and the popular press will be provided throughout the course.

III Administration

The course grade will be based on cases, problem sets, class participation, a midterm and a final exam. The components of the grade are as follows:

Cases	15%
Problem sets	25%
Midterm exam	20%
Final exam	25%
Class participation and quizzes	15%

Review sessions

Optional review sessions, led by the course TA, will be held almost every Friday (see calendar on Canvas) from 4:00-5:30pm in Uris 330. You can also attend review sessions from Kent Daniel's sections of the course. These will be held on Fridays, from 9-10:30am in Uris 326, and from 2:15-3:45 pm in Uris 142. Review sessions will cover no new material, and will emphasize working through problems and answering student questions.

I will hold two special (optional) review sessions, one each before the midterm and final exam:

- Tuesday, October 13th, 9:00-10:00am, Uris 303
- Wednesday, December 9th, 9:00-10:00am, Uris 303

Details

Groups. Cases and problem sets should be done in **groups of 3 members** (MBA assignment type A). Students are responsible for organizing these groups and should add all group members to one of the Assignment Groups on Canvas.

Cases. There will be four case assignments, though the first is intended as a review and will not be graded. Each case will be distributed at least one class in advance and due by 10:45am on the due date. Cases and solutions will be available only on Canvas. Submitted cases will be graded on a check plus, check, or check minus scale. The case grades are weighted equally in your course grades. Because case solutions are discussed in class, late cases will not be accepted.

Problem sets. There will be six problem sets, though the first is intended as a review and will not be graded. Each problem set will be distributed one week in advance and will be due by 5:00pm on the due date. Problem sets and solutions will be available only on Canvas. Submitted problem sets will be graded on a check plus, check, or check minus scale. Although grades will be assigned to all assignments, your lowest grade will be excluded from your problem set average when computing your course grade.

Class participation. You will gain points by regularly attending class, being prepared, answering questions, asking questions, and by helping your classmates have a good experience with the course. You lose points by not coming to class, not participating in the class, not being prepared, and particularly by distracting or disruptive behavior. **Please note that laptops and cell phones should be turned off in class.**

Weekly Canvas quizzes. Each week, students must take a short quiz on Canvas between Thursday at 6pm and the following Tuesday at 10:45am. Each quiz consists of no more than three review questions based on the weeks lectures and readings. Quizzes must be taken individually. Any books, references, computing or calculating equipment may be used. Quiz scores count towards the participation component of your grade. Solutions will be posted soon after quizzes are due.

Exams

Any books, references, computing or calculating equipment may be used.

- The midterm exam will be on Thursday, October 15 at 2:00pm (room TBD).

- The final exam will be on Tuesday, December 15 at 2:00pm (room TBD).

IV A word of advice

The material in this course can be challenging at times. If you don't understand something, then most likely many of your classmates do not understand it either, and you would help yourself and them by asking questions.

Discuss concepts you do not understand with your classmates. I always found after class discussions extremely useful to clarifying the material covered in class. If after your discussion you still do not understand something, then get in touch with either the teaching assistant or with me. Also, the Friday review sessions will be very useful for working through the concepts covered in class.

The best way to absorb quantitative concepts is to practice using them. In addition to the class problem sets and cases, it may be helpful to work through some of the problems at the end of the relevant chapters in BKM.

V Outline

Class	Fall 2015	Section*	Topic	BKM		
				Chapters	Assign	Due Date
1	Tue Sep 01	Intro	Course Outline and Background	1, 2	Case 0	Thu Sep 03
2	Thu Sep 03	Intro	Shorting, Leverage, and No-arbitrage	2, 3	PS 0	Tue Sep 15
3	Tue Sep 08	FI	Pricing STRIPS and Coupon Bonds	14		
4	Thu Sep 10	FI	Term Structure of Interest Rates	15	PS 1	Thu Sep 24
5	Tue Sep 15	FI	Interest Rate Risk (Duration)	16	Case 1	Tue Sep 22
6	Thu Sep 17	FI	Risk Management (Immunization)	16		
7	Tue Sep 22	FI	Interest Rate Swaps	16	PS 2	Thu Oct 01
8	Thu Sep 24	PC	Approaches to Valuation	5, 18		
9	Tue Sep 29	PC	Diversification	6	PS 3	Tue Oct 13 [†]
10	Thu Oct 01	PC	The Efficient Frontier	7		
11	Tue Oct 06	PC	The CAPM – Theory	8, 9		
12	Thu Oct 08	PC	The CAPM – Applications	8, 9		
	Thu Oct 15		Midterm Exam – 2 pm			
13	Thu Oct 22	PC	CAPM Anomalies	9, 11	PS 4	Thu Nov 5
14	Tue Oct 27	PE	Beyond the CAPM	10, 13	Case 2	Thu Oct 29
15	Thu Oct 29	PE	Performance Evaluation	4, 24		
16	Thu Nov 05	ME	Biases & Limits to Arbitrage	12	PS 5	Thu Nov 12
17	Tue Nov 10	ME	Empirical Anomalies	12		
18	Thu Nov 12	ME	Guest Speaker: <i>TBD</i>	26, 27		
19	Tue Nov 17	Deriv	Payoffs and Arbitrage Relationships	20	PS 6	Tue Nov 24
20	Thu Nov 19	Deriv	Replicating an Option	21		
21	Tue Nov 24	Deriv	Binomial Model	21		
22	Tue Dec 01	Deriv	Black-Scholes Valuation	21	Case 3	Tue Dec 08
23	Thu Dec 03	Deriv	Applications and Trading Strategies	21		
24	Tue Dec 08	Deriv	Derivative Applications/Course Synthesis	21		
	Tue Dec 15		Final Exam – 2 pm			

*Sections are: Introduction, Fixed Income (FI), Portfolio Choice (PC), Performance Evaluation (PE), Market Efficiency (ME), and Derivate Securities

[†]There is a midterm review session (and no class) on this day.